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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,487	10/17/2005	Hans-Ulrich Haefner	LYBZ 2 00096	1294
27885	7590	04/04/2007		
FAY SHARPE LLP 1100 SUPERIOR AVENUE, SEVENTH FLOOR CLEVELAND, OH 44114			EXAMINER WALBERG, TERESA J	
			ART UNIT	PAPER NUMBER
			3744	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/04/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

ED

**Office Action Summary**

Application No.

10/553,487

Applicant(s)

HAEFNER ET AL.

Examiner

Teresa J. Walberg

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/17/05</u> | 6) <input type="checkbox"/> Other: ____  |

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-6, 11, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Ward (3,304,999).

Ward discloses a regenerator (see Title) and a heat storing medium including a set of pourable bodies (12), the bodies being gastight sealed hollow bodies (col. 2, lines 38-44), each hollow body containing a fill of a low-boiling gas as a storage medium and having a hollow body wall made of metal (col. 2, line 56), the thermal penetration depth equaling at least the wall thickness (inherent since function as a regenerator would necessarily require this), the storing medium being helium (col. 2, line 40), the medium being within a housing (10, see Fig. 1).

3. Claims 1, 2, 4, 7, 11, 12, 14, 15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Goldowsky (4,359,872).

Goldowsky discloses a heat storing medium (col. 5, line 27) including a set of pourable bodies (Fig. 2), the bodies being gastight sealed hollow bodies (col. 5, line 28), each hollow body containing a fill of a low-boiling point gas (helium, col. 5, line 33) as a storage medium and having a hollow body wall made of

metal (col. 5, line 30), the wall being made of copper (col. 5, line 30), the storing medium being helium (col. 5, line 33), the wall thickness being smaller than 1.0 mm (col. 5, lines 45-46), the medium being within a housing (16, shown in Fig. 1), and configured as a Sterling refrigerator (col. 1, lines 15-17) and helium gas used as a working fluid (col. 5, line 33), the metal being copper (col. 5, line 30).

4. Claims 1 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Mueller et al (DE 100 39 320).

Mueller et al disclose structure usable as a heat storing medium including a set of pourable bodies (10), the bodies being gastight sealed hollow bodies (para. 0029), each hollow body containing a fill of a low boiling gas as a storage medium (para. 0029) and having a hollow body wall made of metal, the wall thickness being less than 1.0 mm (para. 0024), the hollow body being approximately spherical (Figs. 3 and 4, item 10), the hollow body having a diameter of less than 3.0 mm (para. 0024).

5. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Petrakis et al (DE 196 14 022).

Petrakis et al discloses a heat storing medium including a set of pourable gastight sealed hollow bodies, each containing a fill of a low boiling gas as a storing medium, and having a hollow body wall made of ceramic material. See English language abstract.

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldowsky (4,359,872).

Goldowsky discloses a heat storing medium as claimed, but does not specify the wall thickness, the size of the material, and the gas pressure. However, it would have been obvious to one of ordinary skill in the art to select any suitable size, wall thickness, and gas pressure based on the intended use of the device.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Petrakis et al (DE 196 14 022) in view of Goldowsky (4,359,872).

Petrakis discloses a medium as claimed, but does not appear to teach placing it in a housing. However, Goldowsky teaches placing a medium formed of small spheres in a housing. It would have been obvious in view of Goldowsky to place the small spheres of Petrakis within a housing, the motivation being to hold them in a desired shape.


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9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chellis et al, Daniels, and Lam are cited to show cryogenic systems.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is (571)272-4790. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571)272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Teresa J. Walberg  
Primary Examiner  
Art Unit 3744

tjw